

**NAVY TRAINING SYSTEM PLAN**

**FOR THE**

**VH-3D HELICOPTER**

**N88-NTSP-A-50-0007/A**

**November 2001**

## **VH-3D HELICOPTER**

### **EXECUTIVE SUMMARY**

This Navy Training Systems Plan (NTSP) provides an estimate of manpower, personnel, and training requirements to support the employment concepts currently in use for the VH-3D Helicopter. The VH-3D has been in use for approximately 25 years and is the helicopter transport for the President of the United States, Vice President, and other visiting heads of state. It has seating provisions for 16 passengers and the aircrew, which consists of a pilot, co-pilot, and crewchief. Designed as an executive transport, the aircraft systems, interior furnishings, and equipment have been optimized for executive transport missions. The VH-3D receives extensive care and maintenance exceeding normal standards to keep the aircraft in superior condition. The VH-3D incorporates a folding pylon for loading and storage onto an Air Force C-5A/B and C-17 transport for overseas assignments.

The VH-3D is in the, Operations and Support phase of the Defense Acquisition System. Although there is no production line currently for the VH-3D, the helicopter is expected to remain in service until the year 2012 based on current utilization data. Current training for Marine Helicopter Squadron One (HMX-1) pilots, and maintenance personnel is provided by a contractor at the squadron. No specific formal military aircrew or maintenance training exists for the VH-3D. On 26 November 1995, the Secretary of Defense directed the Department of the Navy to procure a VH helicopter pilot simulator for HMX-1. A contract to procure the VH-60N Aircrew Procedures Trainer (APT) was awarded in April 2000. The APT, when delivered will be maintained and operated by the contractor for a period of up to two years. NAVAIR is currently determining what approach to take for Contractor Operation and Maintenance of Simulators (COMS), after the APT Contractor Logistic Support period.

HMX-1 has an outstanding safety record. Increased operational tempo has made it a challenge to meet the training requirements of personnel and the decreased availability of aircraft for training purposes. Although the overall training program is sufficient in many areas, recommendations for improvement are noted in more detail in the Training Concept of this document. Particular attention is given to utilizing technology to allow modular lesson formats and Interactive Multimedia Instruction as well as improving current Training Devices for hands on learning. A Training Objectives Analysis was conducted on HMX-1's curriculum in January 2000 which supports utilizing technology to allow modular lesson formats and Interactive Multimedia Instruction, as well as providing a Composite Maintenance Training Device for hands on learning. Currently, an automated Curriculum Outline is being developed which will allow the instructor to match courses with instructional media, learning objectives, and test strategies. It will also enable the instructor to choose the best media to teach a particular course. The automated Curriculum Outline has an expected delivery date of May 2001. Updates to this NTSP will include any additional improvements to the training program.

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**LIST OF ACRONYMS**

ACT	Aircrew Coordinator Training
APML	Assistant Program Manager for Logistics
APT	Aircrew Procedures Trainer
APU	Auxiliary Power Unit
ASE	Automatic Stabilization Equipment
COMM/NAV	Communication/Navigation
DSS	Department of Safety and Standardization
ECS	Environmental Control System
EPA	Environmental Protection Agency
FY	Fiscal Year
HMX-1	Marine Helicopter Squadron One
IETM	Interactive Electronic Technical Manual
ISSL	Initial Spares Support List
MATMEP	Maintenance Training Management and Evaluation Program
MOS	Military Occupational Specialty
MRC	Maintenance Requirements Cards
NA	Not Applicable
NAS	Naval Air Station
NATOPS	Naval Air Training and Operating Procedures Standardization
NAVAIRSYSCOM	Naval Air System Command
NTSP	Navy Training System Plan
OEM	Original Equipment Manufacturer
OJT	On-the-Job-Training
OPNAVINST	Office of the Chief of Naval Operations Instruction
OPS	Operations
PMA	Program Manager, Air
RFT	Ready For Training

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**LIST OF ACRONYMS**

SPAR	Special Progressive Aircraft Rework
TC	Training Contractor
TD	Training Device
TMS	Type/Model/Series
TTE	Technical Training Equipment
USMC	United States Marine Corps
VATS	Vibration Analysis Test Set

**VH-3D HELICOPTER**

**PREFACE**

This Approved Navy Training Systems Plan (NTSP) was developed to update the Draft NTSP N88-NTSP-A-50-0007/D, dated December 2000. This Proposed NTSP was prepared as part of the NTSP process within guidelines set forth in the Navy Training Requirements Documentation Manual, Office of the Chief of Naval Operations (OPNAV) Publication P-751-1-9-97. Included in this NTSP are fleet comments from Director of Naval Training and Education (N79) and Aviation Program Manager (PMA 2614). These comments are general in nature.

## PART I - TECHNICAL PROGRAM DATA

### A. NOMENCLATURE-TITLE-PROGRAM

1. **Nomenclature-Title-Acronym.** VH-3D Helicopter.
2. **Program Element.** 0901212M

### B. SECURITY CLASSIFICATION

1. **System Characteristics** ..... Unclassified
2. **Capabilities** ..... Unclassified
3. **Functions**..... Unclassified

### C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS

OPNAV Principal Official (OPO) Program Sponsor..... CNO (N78)

OPO Resource Sponsor ..... CNO (N78)

Marine Corps Program Sponsor..... HQMC (APW51)

Developing Agency..... NAVAIRSYSCOM (PMA 2614)

Training Agency ..... CNET

Training Support Agency ..... NAVAIRSYSCOM (PMA 205)

Manpower and Personnel Mission Sponsor ..... HQMC-Code M

Director of Naval Training ..... CNO (N79)

Marine Corps Force Structure..... MCCDC (C53)

### D. SYSTEM DESCRIPTION

1. **Operational Uses.** The VH-3D provides helicopter transportation for the President of the United States, Vice President of the United States, members of the President's Cabinet, and foreign dignitaries as directed by the Director, White House Military Office. When on a mission, the detachment is completely self-contained, supported by dedicated aircrew, maintenance, technical representatives, security personnel and logistics for the duration of the event.

**2. Foreign Military Sales.** Not Applicable (NA)

**E. DEVELOPMENTAL TEST AND OPERATIONAL TEST.** All Developmental and Operational Testing were successfully completed.

**F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED.** NA

**G. DESCRIPTION OF NEW DEVELOPMENT**

**1. Functional Description.** The VH-3D is a single main rotor, twin turbine engine helicopter. The crew consists of a pilot, copilot, and crewchief. Aircraft systems, furnishings, and equipment optimized for executive transport mission. A heater/air-conditioning system is provided to maintain a constant cabin temperature at all times. The VH-3D incorporates a folding pylon and non-folding rotary wing head. Distinguishing features include, a boat hull shaped fuselage and outrigger sponsons into which the main landing gear retracts. Rotors consist of a five-blade rotary wing head and a five blade rotary rudder.

**2. Physical Description**

VH-3D PHYSICAL CHARACTERISTICS		
Maximum Pylon spread	72 feet	8 inches
Pylon folded	57 feet	3 inches
Wheel Base	23 feet	5.5 inches
Maximum to top of rotary rudder, blade vertical	16 feet	10 inches
Minimum, pylon folded	15 feet	10 inches
Maximum	62 feet	0 inches
Overall width	15 feet	10 inches
Main landing gear tread	13 feet	0 inches
Minimum rotary wing ground clearance (tip clearance forward sector)	12 feet	1 inch
Minimum rotary rudder ground clearance	6 feet	6 inches
Minimum clearance for 180 degree turn	44 feet	11 inches

**3. New Development Introduction.** NA

**4. Significant Interfaces.** NA

**5. New Features, Configurations, or Material.** NA



## H. CONCEPTS

**1. Operational Concept.** The VH-3D has been in operation for approximately 25 years and is designed as an executive transport. The crew consists of a pilot, co-pilot, and crewchief. Marine Helicopters Squadron One (HMX-1) is the only Marine Squadron that operates the VH-3D. HMX-1 is required to provide executive support throughout the United States as well as overseas. Mission detachments are completely self-contained and supported by dedicated aircrew, maintenance, technical representatives, security personnel and logistics for the duration of the event.

**2. Maintenance Concept.** The Maintenance Concept for the VH-3D is based on three levels of maintenance as stated in the Naval Maintenance Program Manual, Office of the Chief of Naval Operations Instruction (OPNAVINST) 4790 series, organizational, intermediate and depot.

Maintenance at HMX-1 is organized into two separate departments; the Executive Aircraft Maintenance and United States Marine Corps (USMC) Aircraft Maintenance. The Executive Maintenance is also known as “Whiteside” or “Cage” maintenance and will be referred to as the Whiteside in this document. The USMC Maintenance Aircraft Department is also known as the “Greenside” or “Stake” maintenance and will be referred to as the Greenside in this document. The Whiteside maintenance department maintains the VH-3D.

**a. Organizational.** The organizational level maintenance consists of those maintenance actions normally performed by an operating activity in support of its day-to-day operations. Due to the highly structured missions of executive transport, aircraft configuration is tightly controlled.

**(1) Preventive Maintenance.** Preventive Maintenance consists of scheduled inspections and servicing at specific intervals as required by the applicable Maintenance Requirements Cards (MRC) procedures and is performed by the Squadron’s Flight Line, Airframe, and Avionics Maintenance personnel. For the VH-3D, these inspections are performed in two phases after every 150 hours of flight. After completing four full cycles of the two, phase inspections, the aircraft normally undergoes a Special Progressive Aircraft Rework (SPAR) inspection. Preventive actions performed on the aircraft include corrosion inspection, wiping down the outside of the aircraft by hand after each flight regardless of flight time, lubrication and servicing and daily turnaround and special inspections.

**(2) Corrective Maintenance.** Corrective Maintenance is unscheduled and consists of fault isolation, repair, and replacement of components when verified as faulty. Built-In Test or test sets are used on the appropriate systems to determine if certain parts or assemblies are in need of repair or replacement. The Squadron’s Flight Line, Airframe, and Avionics Maintenance Personnel perform these actions.

**b. Intermediate.** Intermediate level maintenance is performed on those Weapon Replacement Assemblies and Shop Replaceable Assemblies beyond the capability of the organizational maintenance level activity. These assemblies are more specialized and complex

requiring a higher level of skill to repair the faulty component. Limited, intermediate level maintenance, support is provided for non-flight critical items. A local intermediate component repair list is published detailing components that are tested and checked, limited repair, or repaired at the Intermediate level. Facilities at Naval Air Station (NAS) Patuxent River, Maryland are used for selected VH-3D avionics. Component repairs beyond the capabilities of this facility are forwarded to the appropriate contracted Original Equipment Manufacturer (OEM). There is an intermediate level engine shop in the Whiteside facility that performs intermediate level functions on T-58 engines and T-62 Auxiliary Power Unit (APU) and assists in organizational level tasks performed by other shops. Components and assemblies requiring maintenance above the level of the squadron's capabilities are sent to OEM facilities. Replacement parts are acquired from contracted OEM. Special clearances and inspection processes are in place to maintain the security of VH components and the integrity of the closed loop VH supply system.

**c. Depot.** Depot level maintenance consists of major overhaul of the aircraft or the rebuilding, manufacture, and modification of parts, assemblies, and subassemblies beyond the capabilities of the Intermediate Maintenance Activity. Scheduled Depot maintenance, occurs at the expiration of 28 months or 1200 flight hours, whichever comes first, and is accomplished by the OEM.

**d. Interim Maintenance.** NA

**e. Life-Cycle Maintenance Plan.** The Standard Depot Level Maintenance Plan requires that the VH-3D undergo a SPAR every 1200 hours of flight time or 28 months, whichever comes first. SPAR is an enhanced version of the Scheduled Depot Level Maintenance and includes partial disassembly of the airframe, replacement of components, refurbishment of interior furnishings, assessing aircraft structural integrity and repainting the aircraft. The requirements are outlined in the revised SPAR Specification in accordance with Naval Air Systems Command (NAVAIRSYSCOM) Instruction 4710.1.

As a main airframe for Executive missions, the VH-3D is considered an "aging" aircraft because no production line currently exists. It is subject to recurring in-depth evaluations of the condition and maintenance procedures resulting in establishing a service life of 14,000 flight hours based on Service Life Assessment Program and Service Life Extension Programs performed on the airframes. Based on current utilization data, these aircraft will remain in service until approximately 2012.

**3. Manning Concept.** HMX-1 is the largest permanently formed aircraft squadron in the Marine Corps. The major divisions within the unit are: Administration, Operations, Logistics, Safety & Standardization, White House Liaison Office, Executive Alert Facility, Plans, Security, Communications, Fiscal, Aviation Supply, Operational Test & Evaluation, Whiteside and Greenside.

Specific Military Occupational Specialties (MOS) do not exist for the VH-3D since the training is done by a contractor, rather than the military. Personnel who are assigned to operate and maintain the VH-3D are selected from the population of regular, marine forces, aviation

personnel and have no previous experience on this platform. Personnel are, specifically recruited for HMX-1 and usually spend a year on the Greenside while intensive background investigations are conducted by the appropriate Department of Defense agency. Once personnel are given appropriate clearance and access, they are eligible for transfer to the Whiteside.

The number of detachments varies according to the number of missions. When on a mission, the detachment is completely self-contained, supported by dedicated aircrew, maintenance, technical representatives, security personnel and logistics for the duration of the event in compliance with the Standard Operating Procedures contained in the Whiteside Trip Leader Manual.

**4. Training Concept.** No specific Navy Training Schools, “A”, “C”, or Fleet Replacement Enlisted Skills Training are in existence for the VH-3D maintenance shop personnel for the VH platform. The job familiarization process is heavily dependent upon On-the-Job-Training (OJT). All aircraft familiarization and mission training is handled on the squadron level, with the exception of the pilots, who currently complete simulator training at NAS Jacksonville, Florida. Flight Line personnel are trained specifically to either the VH-3D or VH-60N whereas the pilots and personnel for avionics, and airframes are trained on both VH helicopters. HMX-1 currently contracts initial and follow-on training for the VH-3D to an external Training Contractor (TC).

**1. Pilot:** Flight scheduling is a very involved process in a squadron that currently has 75 pilots on-hand and flies four different Type/Model/Series (TMS) aircraft. The TMS aircraft currently requiring Primary Aircraft Authorization are the VH-3D, VH-60N, CH-53E, and CH-46E. Only the first two are flown for the Whiteside. The majority of pilots on the Whiteside are qualified in three platforms. On 26 November 1995, the Secretary of Defense directed the Department of the Navy to procure a VH Helicopter pilot simulator for HMX-1. A contract to procure the VH-3D APT was awarded in April 2000 with a Ready For Training (RFT) date of August 2002. After fielding of the APT, HMX-1 will have the capability to conduct both initial and refresher pilot training locally. The APT, is being funded by Program Manager, Air (PMA)-261 and is being built into a re-locatable enclosure on a pad adjacent to the Cage area along with another enclosure being built for office/debrief space.

The squadron currently does not have access to any aircraft simulators at HMX-1 Quantico, Virginia. The HMX-1 pilots use the Navy simulators located at NAS Jacksonville, Florida that belong to the Commander Helicopter Anti-Submarine Wing, Atlantic Fleet. Pilots may receive training in standard fleet SH-3 simulators prior to commencing the VH syllabus. After that, pilots receive only annual refresher training in both simulators. The APT trainer will enable personnel to perform pilot groundwork training. Primary functions of the APT will allow for practical application in the areas of pilot groundwork, including emergency procedures. Once delivered, the APT is expected to successfully accomplish the following goals by increasing aircraft availability and supporting the following:

- The current pilot courses being conducted at HMX-1.

- Refresher training.
- Enabling pilots to remain in compliance with OPNAVIST 3710.7.

The current pilot courses are being evaluated to incorporate the APT in the instruction. Future versions of this NTSP will update the changes that impact the courses such as, the System Familiarization Course, and whether additional days are added to the course in order to incorporate the APT.

**2. Aircrew:** Aircrew Coordination Training (ACT) is the Naval Aviation term for Crew Resource Management. The ACT program at HMX-1 is implemented by three officers who received their ACT instructor designation after attending the Navy's instructor course at NAS Pensacola, Florida.

Formal documented training is conducted at two safety stand-downs each year. The training includes lectures and videotapes in combined pilot and aircrew sessions. Pilots and aircrew are evaluated on ACT skills annually utilizing instrumented written exams and check flights.

The Department of Safety and Standardization (DSS) and Operations (OPS) monitor and track all aircrew qualifications for the squadron. DSS publishes a monthly 30-60-90 day report that goes to OPS and the Commanding Officer for upcoming instrument and Naval Air Training and Operation Procedures Standardization (NATOPS) defined checkrides.

**3. Maintenance:** Maintenance training is provided at HMX-1 Quantico, Virginia and attended by approximately 183 personnel per year arriving directly from school after recruit training who have no prior experience on this specific platform. Due to the operational requirements, missions and scheduled depot maintenance events, training is impacted by not having aircraft available for OJT, and by disrupting the class schedule.

The Follow-on TC, in conjunction with HMX-1 directives, has designed and developed the curriculum content, classroom training aides, instructor guides and student manuals for traditional classroom familiarization training of pilots and maintenance personnel. The annual training schedule is set by the TC and modified by the squadron's mission load. Due to the squadron's mission requirements, rescheduling personnel for training is more the rule, rather than the exception. This environment of frequent mission requirements lends itself to a modular lesson format and Interactive Multimedia Instruction. Enhancing the training program would accomplish the following goals:

- Maximize squadron operational safety.
- Ensure the rapid mastery of job tasks by pilot and maintainers.
-

- Initial Maintenance Training.
- Initial Pilot Aircraft Systems Training.
- Refresher Job Training.
- Specialized Aircraft Systems Training, (e.g. new systems, Engineering Change Proposal, Airframes Bulletin, Avionics Change, etc.).
- Deployable Training, (e.g. Just-in-time Training, virtual expert, remote support, etc.).

In addition, improvements made to the following current Training Devices and the acquisition of the Aircrew Cockpit simulator would further support the training goals.

**Note:** PMA-261 funded procurement of an APT in Fiscal Year (FY) 02 with an expected delivery date of July 2002.

DEVICE	LOCATION	INSTALL DATE	COMMENTS
VH-3D Composite Maintenance Trainer (Improvement)	HMX-1 Quantico, Virginia	September 1995	Upgrade to a 3D series, currently it is SH-3D.
Landing Gear Part Task Trainer (Improvement)	HMX-1 Quantico, Virginia	September 1995	Upgrade hydraulic components.
Engine Part Task Trainer (Improvement)	HMX-1 Quantico, Virginia	September 1995	Replace existing trainer with new one, current trainer is worn from use.
Automatic Stabilization Equipment (ASE) (Improvement)	HMX-1 Quantico, Virginia	September 1995	Replace existing trainer with new one. Current trainer is incompatible with system installed on the helicopter.
Environmental Control System (ECS)	HMX-1 Quantico, Virginia	September 1995	Representative of system in VH-3D. Serves as training aid for VH-3D ECS course. No modification necessary.
VH-3D Driveshaft Part Task Trainer	HMX-1 Quantico, VA	September 1995	No modification necessary.
VH-3D APT	To be located at	July 2002	Device 2F180.

DEVICE	LOCATION	INSTALL DATE	COMMENTS
	HMX-1 Quantico, Virginia		

The following technology will improve the five areas of training and the associated goals:

- Enhanced classroom instruction to employ sophisticated Computer Assisted Instruction with supporting Interactive Multimedia Lecture System.
- Multimedia Training Facility to include use of self-paced Interactive Courseware.
- Flight simulators and maintenance composite trainers for both TMS aircraft to be used in conjunction with structured training.
- Tracking of all training records and student information via Computer Managed Instruction.
- Utilization of Simulators, Part-Task and Composite Trainers for the efficient development of OJT and systems training.
- Employ the use of Interactive Electronic Technical Manual (IETM), Personal Electronic Display Devices and Electronic Performance Support System for initial classroom, refresher and deployable training.
- Other deployable training resources could involve Compact Disc-Read Only Memory, Digital Video Disc, laptop computers, Internet, Navy Wide Area Network and Video Tele-Training.

The above lists general recommendations of possible future improvements to the training program. Enhancements to the training program are being identified and developed with implementation dates planned for June 2001. Specific improvements will be a Curriculum Outline for the VH-3D lessons that will be automatically generated through a database, which will identify all learning objectives, instructional strategies, and highlight the academics, as well as APT flight events. It will also enable an instructor to choose the best media for a particular lesson plan, including utilization of the APT. As funding becomes available and additional enhancements are implemented, future versions of this NTSP will reflect any changes to the training program.

**a. Initial Training.** NA

**b. Follow-on Training.** Follow-on training for the VH-3D is provided to personnel selected to the Executive Transport from the core of personnel assigned to the squadron. These personnel are originally ordered into the command from Rotary Wing Maintenance Personnel: CH-53, CH-46, or H-1, MOSs. Once assigned to this department, contracted instructors give these personnel training. The following courses were developed by TC instructors to provide the instruction for the VH-3D personnel. An additional day may be added to the course length, of the System Familiarization Courses to incorporate the APT and future updates to this NTSP will reflect any changes.

## **(1) Pilot Training**

**Title .....** **VH-3D System Familiarization**

**Description .....** This course provides qualified Marine Pilots with familiarization of the VH-3D and powerplant systems operation, controls and indications.

**Location .....** HMX-1 Quantico, Virginia

**Length .....** 4 days

**RFT date .....** Currently available

**TTE/TD .....** VH-3D Trainer, Drive Shaft Part Task Trainer, Landing Gear Part Task Trainer, Engine Part Task Trainer, VH-3D Main gearbox Quick Change Unit

**Skill Identifier .....** MOSs 7562, 7563, 7564, 7565, 7566

**Prerequisites .....** All students must be qualified U.S. Government helicopter pilots.

**Title .....** **Pilot COMM/NAV System Familiarization**

**Description .....** This course provides the qualified Marine Pilots with familiarization of the VH-3D/VH-60N Communication, Navigation and Countermeasures systems.

**Location .....** HMX-1 Quantico, Virginia

**Length .....** 3 days

**RFT date .....** Currently available

**TTE/TD .....** Computer Based Training

**Skill Identifier .....** MOSs 7562, 7563, 7564, 7565, 7566

**Prerequisites .....** All students must be qualified U.S. Government helicopter pilots and should have attended the VH-3D/VH-60N Pilot Systems Course.

**(2) Maintenance Training.** Maintenance personnel are comprised of Avionics, Flight Line, and Airframes divisions.

### **a. Avionics**

**Title .....** **VH COMM/NAV Organizational Maintenance Course**

**Title ..... VH COMM/NAV Organizational Maintenance Course**

Description ..... This course provides qualified technicians the skills to perform operational checks, troubleshooting and maintenance to systems and components at the organizational level on the VH-3D.

Location ..... HMX-1 Quantico, Virginia

Length ..... 15 days

RFT date ..... Currently available

TTE/TD ..... None required

Skill Identifier ..... MOSs 6322, 6323, 6324

Prerequisites ..... Prior technical training and experience as a helicopter Navigation/Communication System technician, and have attended the VH-3D and VH-60N electrical systems maintenance courses.

**Title ..... VH-3D Electrical Systems Maintenance Course**

Description ..... This course provides qualified maintenance technicians/crewchiefs the skills to perform operational checks, troubleshooting, component replacement, and adjustment of systems and components at the organizational maintenance level on the VH-3D

Location ..... HMX-1 Quantico, Virginia

Length ..... 15 days

RFT date ..... Currently available

TTE/TD ..... Visual training aids only

Skill Identifier ..... MOSs 6322, 6323, 6324

Prerequisites ..... Prior technical training and experience as helicopter electrical systems line maintenance technicians/crewchiefs.

**Title ..... VH-3D Automatic Flight Control System Maintenance Course**

Description ..... This course provides qualified Marine Helicopter Technicians with the skills and knowledge required for operating, testing, adjusting and maintaining the automatic stabilization equipment installed in the VH-3D.



**Title .....** **VH-3D Automatic Flight Control System Maintenance Course**

**Location .....** HMX-1 Quantico, Virginia

**Length .....** 10 days

**RFT date .....** Currently available

**TTE/TD .....** VH-3D  
ASE Maintenance Trainer  
Collective Auxiliary Servo Non Projectable Demonstration Panel  
Cyclic Auxiliary Servo Non Projectable Demonstration Panel  
Yaw Auxiliary Servo Non Projectable Demonstration Panel

**Skill Identifier .....** MOSs 6322, 6323, 6324

**Prerequisites .....** Prior technical training and experience as a helicopter electrical systems line maintenance technician/crewchiefs, and have previously attended VH-3D Electrical Systems Maintenance Course.

#### **b. Airframes and Flight Line**

**Title .....** **VH-3D Vibration Analysis Maintenance Course**

**Description .....** This course is to provide qualified helicopter mechanic's with skills and knowledge required to operate the standard United States Navy Vibration Analysis Test Sets (VATS) in support of the VH-3D Helicopter.

**Location .....** HMX-1 Quantico, Virginia

**Length .....** 2 days

**RFT date .....** Currently available

**TTE/TD .....** VATS

**Skill Identifier .....** MOSs 6112, 6113, 6114, 6152, 6153, 6154, 6172, 6173, 6174

**Prerequisites .....** Must be, qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter airframe and powertrain systems, line maintenance technicians/crewchiefs.

<b>Title .....</b>	<b>VH-3D Airframe and Powertrain System</b>
Description .....	This course provides qualified helicopter mechanic's with the skills and knowledge required to operate, test, and maintain the mechanical airframe and powerplant systems and components of the VH-3D.
Location .....	HMX-1, Virginia
Length .....	22 days
RFT date .....	Currently available
TTE/TD .....	VH-3D Trainer, Landing Gear Part Task Trainer, Engine Part Task Trainer, and Drive Shaft Part Task Trainer
Skill Identifier .....	MOSs 6152, 6153, 6154; 6112, 6113, 6114, 6172, 6173, 6174
Prerequisites .....	Must be, qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter airframe and powertrain systems line maintenance technicians/crewchiefs.

#### **c. Airframes only**

<b>Title .....</b>	<b>Refrigerant Recycling Environmental Protection Agency (EPA) Certification Course</b>
Description .....	This course provides qualified Marine Helicopter Mechanics with the knowledge required to successfully completing the, EPA refrigerant recovery certification test under section 608 of the Clean Air Act of 1990.
Location .....	HMX-1, Virginia
Length .....	5 days
RFT date .....	Currently available
TTE/TD .....	VH-3D ECS pallet
Skill Identifier .....	MOSs 6152, 6153, 6154
Prerequisites .....	Must be, qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter airframe and powertrain systems, line maintenance technicians/crewchiefs.

**Title .....** **Composite Material Repair Course**

**Description .....** This course provides training in the repair techniques for rotor blades, kevlar, and other composite materials used on the CH-53E, VH-3D and VH-60N.

**Location .....** HMX-1 Quantico, Virginia

**Length .....** 10 days

**RFT date .....** Currently available

**TTE/TD .....** None required

**Skill identifier .....** MOSs 6152, 6153, 6154

**Prerequisites .....** Must be, qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter airframe and powertrain systems, line maintenance technicians.

#### **d. Flight Line**

**Title .....** **VH-3D Flight Control System Rigging Course**

**Description .....** This course provides qualified Marine Helicopter Mechanic's with the skills and knowledge required to rig the main and tail rotor systems of the VH-3D.

**Location .....** HMX-1, Virginia

**Length .....** 4 days

**RFT date .....** Currently available

**TTE/TD .....** VH-3D Trainer VH-3D flight control rigging and adjustment kit

**Skill Identifier .....** MOSs 6112, 6113, 6114, 6172, 6173, 6174

**Prerequisites .....** Must be, qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience with helicopter flight controls.

**Title .....** **VH-3D Air Conditioning System Maintenance Course**

**Description .....** This course provides qualified Marine Helicopter mechanics and technicians with the skills and knowledge required to operate, test, inspect, and maintain the air conditioning systems and components of the VH-3D.

**Location .....** HMX-1 Quantico, Virginia

**Title .....** **VH-3D Air Conditioning System Maintenance Course**  
**Length .....** 2 days  
**RFT date .....** Currently available  
**TTE/TD .....** VH-3D ECS Trainer Pallet  
**Skill Identifier .....** MOSs 6112, 6113, 6114, 6172, 6173, 6174  
**Prerequisites .....** Must be, qualified U.S. Government helicopter mechanics/technicians with prior technical training and experience as helicopter line maintenance technicians/crewchiefs.

**c. Student Profiles.** The following table shows the prerequisite skill requirements of personnel ordered into HMX-1.

<b>SKILL IDENTIFIER</b>	<b>PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS</b>
MOS 6112	M-601-2414, CH-46 Power Plants Trains and Rotors Organizational Maintenance Course C-600-3601, Communication Indoctrination Course C-600-9422, CH-46 Mechanical Organizational Maintenance Course
MOS 6113	M-601-2720, CH-53E Power Plants and Related Systems Maintenance C-600-3601, Communication Indoctrination Course C-602-9456, CH-53 Mechanics Organizational Maintenance Course
MOS 6114	M-601-2014, AH-1T/J and UH-1N Power Plants Power Trains and Rotors Maintenance C-600-3601, Communication Indoctrination Course C-601-9351, AH-1W Power Trains and Related Systems Course C-601-9352, H-1 Combination Maintenance Course C-600-9355, UH-1N Power Trains and Rotors and Related Navy Mechanics Course
MOS 6152	M-602-2486, Helicopter Airframe Mechanic CH-46 C-600-3601, Communication Indoctrination Course C-600-3419, H-46 Fiberglass Rotor Blade Repair Organizational Maintenance Course C-603-3419, H-46 Structure and Hydraulics Course
MOS 6153	M-602-2781, Helicopter Airframe Mechanic CH-53

<b>SKILL IDENTIFIER</b>	<b>PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS</b>
	C-600-3601, Communication Indoctrination Course C-603-9444, CH-53 Airframes Systems Organizational Maintenance Course
MOS 6154	M-602-2081, Helicopter Airframe Mechanic A/UH-1 C-600-3601, Communication Indoctrination Course C-600-9363, H1 Airframes Systems Organizational Maintenance Course
MOS 6172	Prerequisite is MOS 6112
MOS 6173	Prerequisite is MOS 6113
MOS 6174	Prerequisite is MOS 6114
MOS 6322	M-102-2424, CH-46 Communication Navigation Identification Systems Organizational Maintenance C-600-3601, Communication Indoctrination Course C-602-3421, H-46 Electrical and Instrument Course C-602-3428, H-46 Automatic Flight Control System Course C-102-3419, H-46 Electrical Counter Measures Course C-102-3416, H-46 Navigation/Communication and Identification Friend or Foe Course C-102-3421, H-46 Cockpit Communication/Navigation Systems Course C-198-3416, H-46 Night Vision Goggle/Heads Up Display Course
MOS 6323	M-102-2731, CH-53E Communications/Electrical System Organizational Maintenance C-600-3601, Communication Indoctrination Course C-602-9441, CH-53 Electrical Systems Course C-602-9451, CH-53E Automatic Flight Control System Course C-102-9945, CH-53A/D/E Communication/Navigation/Identification/Systems Organizational Maintenance Course
MOS 6324	M-102-2024, CH-46 Communication Navigation Identification Systems Organizational Maintenance C-600-3601, Communication Indoctrination Course C-102-9354, H-1 Communications, Navigation Systems Course C-602-9360, H-1 Electrical and Stabilization Control Augmentation System Course

<b>SKILL IDENTIFIER</b>	<b>PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS</b>
	C-198-9351, AH-1 Tactically Operated Wire Guided Hellfire Missile System Course C-602-3357, H-1 Wire Bundle Repair Course
MOS 7562	Qualified in CH-46E
MOS 7563	Qualified in UH-1N
MOS 7564	Qualified in CH-53D
MOS7565	Qualified in AH-1W
MOS 7566	Qualified in CH-53E

**d. Training Pipelines. NA**

**I. ONBOARD (IN-SERVICE) TRAINING.** Pilots and aircrew must comply with, annual flight hour requirements set forth in OPNAVINST 3710.7 to assure an acceptable minimum level of readiness and to enhance aviation safety.

**NAVAL AVIATOR** (pilots with less than 20 years aviation experience)

	<b>Semiannual</b>	<b>Annual (Fiscal Year)</b>
Pilot Time	40	100
Night Time	6	12
Instrument Time	6	12

**SPECIAL CREW** (communication systems operators and crewchiefs)

	<b>Semiannual</b>	<b>Annual (Fiscal Year)</b>
Flight Time	25	50

**1. Proficiency or Other Training Organic to New Development.** The Curriculum Outline will enable instructors to incorporate the APT into their current pilot courses efficiently and will provide essential support for standardizing training.

**2. Personnel Qualification Standards. NA**

**3. Other Onboard or In-Service Training Packages.** Marine Corps onboard training is based on the current series of Marine Corps Order P4790.12, Individual Training Standards System and Maintenance Training Management and Evaluation Program (MATMEP). This program is designed to meet Marine Corps, as well as Navy OPNAVINST 4790.2 series, maintenance training requirements. It is a performance-based, standardized, level-progressive,

documentable, training management and evaluation program. It identifies and prioritizes task inventories by MOS through a front-end analysis process that identifies task, skill, and knowledge requirements of each MOS. Maintenance Training Improvement Program questions coupled to MATMEP tasks will help identify training deficiencies that can be enhanced with refresher training. MATMEP is planned to be replaced by the Aviation Maintenance Training Continuum System.

## J. LOGISTICS SUPPORT

### 1. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N00019-98-C-0136 N00019-01-C-0024	United Technologies Corp., Sikorsky Aircraft Division	6900 Main Street Stratford, CT, 06602

**2. Program Documentation.** The current Integrated Logistics Support Plan was approved 05 August 1998. The contractor provides the Integrated Logistic Support for the VH-3D SPAR effort.

**3. Technical Data Plan.** The following VH-3D series technical manuals, are required and currently available to support the VH-3D. No changes are required:

- Service Unique Flight Manuals (NATOPS)
- Maintenance Instruction Manuals
- Structural Repair Publications
- Illustrated Parts Breakdown
- MRC
- VH-3D NATOPS Pilot's Pocket Checklist

**4. Test Sets, Tools, and Test Equipment.** Unique requirements for, special tools, test sets, and test equipment are provided for by the organization. The squadron maintains a document of materials that lists all required special and unique items. These materials are squadron assets and are utilized by the training contractor to aid in training. Material items include aircraft test equipment, platform unique tools manufactured commercially, and platform unique tools that are manufactured locally.

**5. Repair Parts.** The VH-3D supply support is a "closed loop" system. Special avionics parts are managed by the Naval Air Warfare Center Aircraft Divisions Patuxent River, and Engines, APUs and their related parts are managed by the NAVAIRSYSCOM Assistant Program Manager for Logistics (APML). NAVAIRSYSCOM APML controls all parts. All components

once repaired or overhauled are specifically identified and marked to be returned, to the VH inventory for reissue on VH aircraft only.

**6. Human Systems Integration. NA**

**K. SCHEDULES**

**1. Installation and Delivery Schedules. NA**

**2. Ready For Operational Use Schedule. NA**

**3. Time Required to Install at Operational Sites. NA**

**4. Foreign Military Sales and Other Source Delivery Schedule. NA**

**5. Training Device and Technical Training Equipment Delivery Schedule.** The following table shows the training devices and the date they were on-board for training.

DEVICE	LOCATION	INSTALLATION DATE
APT	HMX-1 Quantico, Virginia	August 2002 (planned)
H-3 Composite Maintenance Trainer	HMX-1 Quantico, Virginia	September 1995
Landing Gear Part Task Trainer	HMX-1 Quantico, Virginia	September 1995
Engine Part Task Trainer	HMX-1 Quantico, Virginia	September 1995
Drive Shaft Part Task Trainer	HMX-1 Quantico, Virginia	September 1995
ASE	HMX-1 Quantico, Virginia	September 1995
ECS	HMX-1 Quantico, Virginia	September 1995

The prime contractor will initially provide Contractor Logistic Support for the APTs. The prime contractor was also required to deliver an Initial Spares Support List (ISSL) and maintain the simulators until the Material Support Date. The ISSL was provided in May 2001. Initial spares are funded by the procuring command out of a separate appropriation.

A contract for Operations and Support of the APTs will be awarded in FY 2004. The contract will detail day to day management of the simulators, performance of routine maintenance, and incorporation of Operational Safety and Improvement Programs and Technical Engineering Change Proposals. An In-Service Engineering Office will be established at Quantico to monitor the performance of the awarded Operations and Support contract.



**L. GOVERNMENT-FURNISHED EQUIPMENT AND CONTRACTOR-FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA**

**M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS.**

<b>DOCUMENT OR NTSP TITLE</b>	<b>DOCUMENT OR NTSP NUMBER</b>	<b>PDA CODE</b>	<b>STATUS</b>
Joint Training System Plan For the V-22 Osprey	N88-NTSP-A-508412D/A	PMA 275	Approved August 99
CH-53E Helicopter	N88-NTSP-A-50-7604G/A	PMA 261	Approved March 01

## **PART II - BILLET AND PERSONNEL REQUIREMENTS**

The following elements are not affected by the VH-3D Helicopter and, therefore, are not included in Part II of this NTSP:

### **II.A Billet Requirements**

- II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule
- II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities
- II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities
- II.A.3. Training Activities Instructor and Support Billet Requirements

## PART II - BILLET AND PERSONNEL REQUIREMENTS

### II.A. BILLET REQUIREMENTS

#### II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: PMA261

DATE: 2/21/01

ACTIVITY, UIC	PFYs	CFY01	FY02	FY03	FY04	FY05
OPERATIONAL ACTIVITIES – USMC						
HMX-1 Marine Corps Helicopter Squadron	1	0	0	0	0	0
TOTAL:	1	0	0	0	0	0

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/	PNEC / SNEC/
	OFF	ENL	RATING	PMOS / SMOS
OPERATIONAL ACTIVITIES - USMC				
HMX-1 Marine Corps Helicopter Squadron, 55615				
USMC	17	0	MAJ	
	45	0	CAPT	
	1	0	CWO3	
	0	3	CPL	6046
	0	1	CPL	6060
	0	3	CPL	6113
	0	3	CPL	6152
	0	1	CPL	6153
	0	7	CPL	6154
	0	2	CPL	6172
	0	4	CPL	6173
	0	4	CPL	6323
	0	2	CPL	6324
	0	2	CPL	6531
	0	2	GYSGT	2537
	0	4	GYSGT	2549
	0	1	GYSGT	6047
	0	1	GYSGT	6060
	0	3	GYSGT	6112
	0	1	GYSGT	6113
	0	1	GYSGT	6124
	0	1	GYSGT	6153
	0	1	GYSGT	6172
	0	1	GYSGT	6174
	0	2	GYSGT	6323
	0	2	GYSGT	6324
	0	1	LCPL	6046
	0	3	LCPL	6113
	0	2	LCPL	6122
	0	2	LCPL	6124
	0	3	LCPL	6153
	0	7	LCPL	6154
	0	4	LCPL	6172
	0	3	LCPL	6323
	0	3	LCPL	6324
	0	1	MGYSGT	2591
	0	1	MGYSGT	6391
	0	1	MSGT	2591
	0	2	SGT	6047
	0	1	SGT	6060
	0	2	SGT	6072
	0	2	SGT	6112
	0	2	SGT	6113
	0	1	SGT	6152
	0	2	SGT	6153

II.A.1.b . BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/	PNEC / SNEC/
	OFF	ENL	RATING	PMOS / SMOS
USMC	0	2	SGT	6172
	0	2	SGT	6173
	0	4	SGT	6322
	0	1	SGT	6323
	0	2	SGT	6324
	0	1	SGT	6531
	0	10	SSGT	2537
	0	5	SSGT	6112
	0	1	SSGT	6113
	0	1	SSGT	6114
	0	2	SSGT	6122
	0	1	SSGT	6152
	0	1	SSGT	6153
	0	2	SSGT	6154
	0	3	SSGT	6172
	0	1	SSGT	6173
	0	3	SSGT	6322
	0	4	SSGT	6323
ACTIVITY	63	143		

## II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG/ RATING	PNEC/SNEC PMOS/SMOS	PFYs		CFY01		FY02		FY03		FY04		FY05	
		OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
USMC OPERATIONAL ACTIVITIES - USMC													
MAJ		17		0		0		0		0		0	
CAPT		45		0		0		0		0		0	
CWO3		1		0		0		0		0		0	
CPL	6046		3		0		0		0		0		0
CPL	6060		1		0		0		0		0		0
CPL	6113		3		0		0		0		0		0
CPL	6152		3		0		0		0		0		0
CPL	6153		1		0		0		0		0		0
CPL	6154		7		0		0		0		0		0
CPL	6172		2		0		0		0		0		0
CPL	6173		4		0		0		0		0		0
CPL	6323		4		0		0		0		0		0
CPL	6324		2		0		0		0		0		0
CPL	6531		2		0		0		0		0		0
GYSGT	2537		2		0		0		0		0		0
GYSGT	2549		4		0		0		0		0		0
GYSGT	6047		1		0		0		0		0		0
GYSGT	6060		1		0		0		0		0		0
GYSGT	6112		3		0		0		0		0		0
GYSGT	6113		1		0		0		0		0		0
GYSGT	6124		1		0		0		0		0		0
GYSGT	6153		1		0		0		0		0		0
GYSGT	6172		1		0		0		0		0		0
GYSGT	6174		1		0		0		0		0		0
GYSGT	6323		2		0		0		0		0		0
GYSGT	6324		2		0		0		0		0		0
LCPL	6046		1		0		0		0		0		0
LCPL	6113		3		0		0		0		0		0
LCPL	6122		2		0		0		0		0		0
LCPL	6124		2		0		0		0		0		0
LCPL	6153		3		0		0		0		0		0
LCPL	6154		7		0		0		0		0		0
LCPL	6172		4		0		0		0		0		0
LCPL	6323		3		0		0		0		0		0
LCPL	6324		3		0		0		0		0		0
MGYSGT	2591		1		0		0		0		0		0
MGYSGT	6391		1		0		0		0		0		0
MSGT	2591		1		0		0		0		0		0
SGT	6047		2		0		0		0		0		0
SGT	6060		1		0		0		0		0		0
SGT	6072		2		0		0		0		0		0
SGT	6112		2		0		0		0		0		0
SGT	6113		2		0		0		0		0		0
SGT	6152		1		0		0		0		0		0
SGT	6153		2		0		0		0		0		0
SGT	6172		2		0		0		0		0		0

## II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG/ RATING	PNEC/SNEC PMOS/SMOS	PFYs		CFY01		FY02		FY03		FY04		FY05	
		OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
SGT	6173		4		0		0		0		0		0
SGT	6322		4		0		0		0		0		0
SGT	6323		1		0		0		0		0		0
SGT	6324		2		0		0		0		0		0
SGT	6531		1		0		0		0		0		0
SSGT	2537		10		0		0		0		0		0
SSGT	6112		5		0		0		0		0		0
SSGT	6113		1		0		0		0		0		0
SSGT	6114		1		0		0		0		0		0
SSGT	6122		2		0		0		0		0		0
SSGT	6152		1		0		0		0		0		0
SSGT	6153		1		0		0		0		0		0
SSGT	6154		2		0		0		0		0		0
SSGT	6172		3		0		0		0		0		0
SSGT	6173		1		0		0		0		0		0
SSGT	6322		3		0		0		0		0		0
SSGT	6323		4		0		0		0		0		0

### SUMMARY TOTALS:

USMC OPERATIONAL ACTIVITIES - USMC													
		63	143	0	0	0	0	0	0	0	0	0	0

### GRAND TOTALS:

USMC - USMC													
		63	143	0	0	0	0	0	0	0	0	0	0

#### II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY, LOCATION, UIC	USN/ USMC	PFYs		CFY01		FY02		FY03		FY04		FY05	
		OFF	ENL	OFF	ENL	OFF	ENL	OF	ENL	OFF	ENL	OFF	ENL
HMX-1 Marine Corps Helicopter Squadron, Quantico, Virginia, 55615													
	USMC	0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7
<b>SUMMARY TOTAL</b>													
	USMC	0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7
<b>GRAND TOTAL</b>													
		0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7	0.4	2.7



## II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC / SNEC PMOS / SMOS	BILLET BASE	CFY01 +/-CUM		FY02 +/-CUM		FY03 +/-CUM		FY04 +/-CUM		FY05 +/-CUM	
a. OFFICER - USN			NA									
b. ENLISTED - USN			NA									
c. OFFICER - USMC												
Operational Billets USMC and AR												
MAJ		17	0	17	0	17	0	17	0	17	0	17
CAPT		45	0	45	0	45	0	45	0	45	0	45
CWO3		1	0	1	0	1	0	1	0	1	0	1
Chargeable Student Billets USMC and AR												
		1	0	1	0	1	0	1	0	1	0	1
TOTAL USMC OFFICER BILLETS:												
Operational		63	0	63	0	63	0	63	0	63	0	63
Chargeable Student		1	0	1	0	1	0	1	0	1	0	1
d. ENLISTED - USMC												
Operational Billets USMC and AR												
CPL	6046	3	0	3	0	3	0	3	0	3	0	3
CPL	6060	1	0	1	0	1	0	1	0	1	0	1
CPL	6113	3	0	3	0	3	0	3	0	3	0	3
CPL	6152	3	0	3	0	3	0	3	0	3	0	3
CPL	6153	1	0	1	0	1	0	1	0	1	0	1
CPL	6154	7	0	7	0	7	0	7	0	7	0	7
CPL	6172	2	0	2	0	2	0	2	0	2	0	2
CPL	6173	4	0	4	0	4	0	4	0	4	0	4
CPL	6323	4	0	4	0	4	0	4	0	4	0	4
CPL	6324	2	0	2	0	2	0	2	0	2	0	2
CPL	6531	2	0	2	0	2	0	2	0	2	0	2
GYSGT	2537	2	0	2	0	2	0	2	0	2	0	2
GYSGT	2549	4	0	4	0	4	0	4	0	4	0	4
GYSGT	6047	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6060	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6112	3	0	3	0	3	0	3	0	3	0	3
GYSGT	6113	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6124	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6153	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6172	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6174	1	0	1	0	1	0	1	0	1	0	1
GYSGT	6323	2	0	2	0	2	0	2	0	2	0	2
GYSGT	6324	2	0	2	0	2	0	2	0	2	0	2
LCPL	6046	1	0	1	0	1	0	1	0	1	0	1
LCPL	6113	3	0	3	0	3	0	3	0	3	0	3
LCPL	6122	2	0	2	0	2	0	2	0	2	0	2
LCPL	6124	2	0	2	0	2	0	2	0	2	0	2

## II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC / SNEC PMOS / SMOS	BILLET BASE	CFY01 +/-CUM		FY02 +/-CUM		FY03 +/-CUM		FY04 +/-CUM		FY05 +/-CUM	
LCPL	6153	3	0	3	0	3	0	3	0	3	0	3
LCPL	6154	7	0	7	0	7	0	7	0	7	0	7
LCPL	6172	4	0	4	0	4	0	4	0	4	0	4
LCPL	6323	3	0	3	0	3	0	3	0	3	0	3
LCPL	6324	3	0	3	0	3	0	3	0	3	0	3
MGYSGT	2591	1	0	1	0	1	0	1	0	1	0	1
MGYSGT	6391	1	0	1	0	1	0	1	0	1	0	1
MSGT	2591	1	0	1	0	1	0	1	0	1	0	1
SGT	6047	2	0	2	0	2	0	2	0	2	0	2
SGT	6060	1	0	1	0	1	0	1	0	1	0	1
SGT	6072	2	0	2	0	2	0	2	0	2	0	2
SGT	6112	2	0	2	0	2	0	2	0	2	0	2
SGT	6113	2	0	2	0	2	0	2	0	2	0	2
SGT	6152	1	0	1	0	1	0	1	0	1	0	1
SGT	6153	2	0	2	0	2	0	2	0	2	0	2
SGT	6172	2	0	2	0	2	0	2	0	2	0	2
SGT	6173	4	0	4	0	4	0	4	0	4	0	4
SGT	6322	4	0	4	0	4	0	4	0	4	0	4
SGT	6323	1	0	1	0	1	0	1	0	1	0	1
SGT	6324	2	0	2	0	2	0	2	0	2	0	2
SGT	6531	1	0	1	0	1	0	1	0	1	0	1
SSGT	2537	10	0	10	0	10	0	10	0	10	0	10
SSGT	6112	5	0	5	0	5	0	5	0	5	0	5
SSGT	6113	1	0	1	0	1	0	1	0	1	0	1
SSGT	6114	1	0	1	0	1	0	1	0	1	0	1
SSGT	6122	2	0	2	0	2	0	2	0	2	0	2
SSGT	6152	1	0	1	0	1	0	1	0	1	0	1
SSGT	6153	1	0	1	0	1	0	1	0	1	0	1
SSGT	6154	2	0	2	0	2	0	2	0	2	0	2
SSGT	6172	3	0	3	0	3	0	3	0	3	0	3
SSGT	6173	1	0	1	0	1	0	1	0	1	0	1
SSGT	6322	3	0	3	0	3	0	3	0	3	0	3
SSGT	6323	4	0	4	0	4	0	4	0	4	0	4
Chargeable Student Billets USMC and AR												
		3	0	3	0	3	0	3	0	3	0	3
<b>TOTAL USMC ENLISTED BILLETS:</b>												
Operational		143	0	143	0	143	0	143	0	143	0	143
Chargeable Student		3	0	3	0	3	0	3	0	3	0	3

## II.B. PERSONNEL REQUIREMENTS

### II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

**CIN, COURSE** VH-3D System Familiarization Course

**COURSE LENGTH:** 1.0 Weeks

**TOUR LENGTH:** 36 Months

**ATTRITION FACTOR:** Navy: 0% USMC: 0%

**BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF ENL	OFF ENL	OFF ENL	OFF ENL	OFF ENL
HMX-1 Marine Corps Helicopter Squadron, Quantico, Virginia							
	USMC	USMC	16	16	16	16	16
		TOTAL:	16	16	16	16	16

**CIN, COURSE** VH-3D COMM/NAV Familiarization Course

**COURSE LENGTH:** 1.0 Weeks

**TOUR LENGTH:** 36 Months

**ATTRITION FACTOR:** Navy: 0% USMC: 0%

**BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF ENL	OFF ENL	OFF ENL	OFF ENL	OFF ENL
HMX-1 Marine Corps Helicopter Squadron, Quantico, Virginia							
	USMC	USMC	16	16	16	16	16
		TOTAL:	16	16	16	16	16

**CIN, COURSE** VH COMM/NAV Organizational Maintenance Course

**COURSE LENGTH:** 2.2 Weeks

**TOUR LENGTH:** 36 Months

**ATTRITION FACTOR:** Navy: 0% USMC: 0%

**BACKOUT FACTOR:** 0.04

TRAINING		ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF ENL	OFF ENL	OFF ENL	OFF ENL	OFF ENL
HMX-1 Marine Corps Helicopter Squadron, Quantico, Virginia							
	USMC	USMC	7	7	7	7	7
		TOTAL:	7	7	7	7	7

**CIN, COURSE** VH-3D Electrical Systems Maintenance Course

**COURSE LENGTH:** 2.2 Weeks

**TOUR LENGTH:** 36 Months

**ATTRITION FACTOR:** Navy: 0% USMC: 0%

**BACKOUT FACTOR:** 0.04

TRAINING		ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF ENL	OFF ENL	OFF ENL	OFF ENL	OFF ENL
HMX-1 Marine Corps Helicopter Squadron, Quantico, Virginia							
	USMC	USMC	8	8	8	8	8
		TOTAL:	8	8	8	8	8

**CIN, COURSE** VH-3D Automatic Flight Control System Maintenance Course

**COURSE LENGTH:** 1.6 Weeks

**TOUR LENGTH:** 36 Months

**ATTRITION FACTOR:** Navy: 0% USMC: 0%

**BACKOUT FACTOR:** 0.00

TRAINING		ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF ENL	OFF ENL	OFF ENL	OFF ENL	OFF ENL
HMX-1 Marine Corps Helicopter Squadron, Quantico, Virginia							
	USMC	USMC	8	8	8	8	8
		TOTAL:	8	8	8	8	8

## II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

**CIN, COURSE** VH-3D Vibration Analysis Maintenance Course  
**COURSE LENGTH:** 0.4 Weeks **TOUR LENGTH:** 36 Months  
**ATTRITION FACTOR:** Navy: 0% USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING	ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL
HMV-1 Marine Corps Helicopter Squadron, Quantico, Virginia	USMC	USMC	18	18	18	18
		TOTAL:	18	18	18	18

**CIN, COURSE** VH-3D Airframe and Powertrain System Course  
**COURSE LENGTH:** 3.2 Weeks **TOUR LENGTH:** 36 Months  
**ATTRITION FACTOR:** Navy: 0% USMC: 0% **BACKOUT FACTOR:** 0.06

TRAINING	ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL
HMV-1 Marine Corps Helicopter Squadron, Quantico, Virginia	USMC	USMC	17	17	17	17
		TOTAL:	17	17	17	17

**CIN, COURSE** Refrigerant Recycling EPA Certification Course  
**COURSE LENGTH:** 1.0 Weeks **TOUR LENGTH:** 36 Months  
**ATTRITION FACTOR:** Navy: 0% USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING	ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL
HMV-1 Marine Corps Helicopter Squadron, Quantico, Virginia	USMC	USMC	7	7	7	7
		TOTAL:	7	7	7	7

**CIN, COURSE** Composite Material Repair Course  
**COURSE LENGTH:** 1.6 Weeks **TOUR LENGTH:** 36 Months  
**ATTRITION FACTOR:** Navy: 0% USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING	ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL
HMV-1 Marine Corps Helicopter Squadron, Quantico, Virginia	USMC	USMC	18	18	18	18
		TOTAL:	18	18	18	18

**CIN, COURSE** VH-3D Flight Control System Rigging Course  
**COURSE LENGTH:** 0.8 Weeks **TOUR LENGTH:** 36 Months  
**ATTRITION FACTOR:** Navy: 0% USMC: 0% **BACKOUT FACTOR:** 0.00

TRAINING	ACDU/TAR	CFY01	FY02	FY03	FY04	FY05
ACTIVITY	SOURCE	SELRES	OFF	ENL	OFF	ENL
HMV-1 Marine Corps Helicopter Squadron, Quantico, Virginia	USMC	USMC	10	10	10	10
		TOTAL:	10	10	10	10

CIN, COURSE	VH-3D Air Conditioning System Maintenance Course		
COURSE LENGTH:	0.4 Weeks	TOUR LENGTH:	36 Months
ATTRITION FACTOR:	Navy: 0% USMC: 0%	BACKOUT FACTOR:	0.00

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## **PART III - TRAINING REQUIREMENTS**

The following elements are not affected by the VH-3D Helicopter and, therefore, are not included in Part III of this NTSP:

III.A.1. Initial Training Requirements

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

### III.A.2. FOLLOW-ON TRAINING

#### III.A.2.a. EXISTING COURSES

**CIN, COURSE** VH-3D System Familiarization  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
16		16		16		16		16		ATIR
16		16		16		16		16		Output
0.2		0.2		0.2		0.2		0.2		AOB
0.2		0.2		0.2		0.2		0.2		Chargeable

**CIN, COURSE** VH-3D COMM/NAV Familiarization Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
16		16		16		16		16		ATIR
16		16		16		16		16		Output
0.2		0.2		0.2		0.2		0.2		AOB
0.2		0.2		0.2		0.2		0.2		Chargeable

**CIN, COURSE** VH COMM/NAV Organizational Maintenance Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	7		7		7		7		7	ATIR
	7		7		7		7		7	Output
	0.3		0.3		0.3		0.3		0.3	AOB
	0.3		0.3		0.3		0.3		0.3	Chargeable

**CIN, COURSE** VH-3D Electrical Systems Maintenance Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	8		8		8		8		8	ATIR
	8		8		8		8		8	Output
	0.3		0.3		0.3		0.3		0.3	AOB

### III.A.2.a. EXISTING COURSES

**CIN, COURSE** VH-3D Automatic Flight Control System Maintenance Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	8		8		8		8		8	ATIR
	8		8		8		8		8	Output
	0.2		0.2		0.2		0.2		0.2	AOB
	0.2		0.2		0.2		0.2		0.2	Chargeable

**CIN, COURSE** VH-3D Vibration Analysis Maintenance Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	18		18		18		18		18	ATIR
	18		18		18		18		18	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

**CIN, COURSE** VH-3D Airframe and Powertrain Systems Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	17		17		17		17		17	ATIR
	17		17		17		17		17	Output
	1.0		1.0		1.0		1.0		1.0	AOB
	1.0		1.0		1.0		1.0		1.0	Chargeable

**CIN, COURSE** Refrigerant Recycling EPA Certification Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	7		7		7		7		7	ATIR
	7		7		7		7		7	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable



### III.A.2.a. EXISTING COURSES

**CIN, COURSE** Composite Material Repair Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	18		18		18		18		18	ATIR
	18		18		18		18		18	Output
	0.5		0.5		0.5		0.5		0.5	AOB
	0.5		0.5		0.5		0.5		0.5	Chargeable

**CIN, COURSE** VH-3D Flight Control System Rigging Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	10		10		10		10		10	ATIR
	10		10		10		10		10	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

**CIN, COURSE** VH-3D Air Conditioning System Maintenance Course  
**TRAINING** HMX-1 Marine Corps Helicopter Squadron  
**LOCATION,** Quantico, Virginia, 55615

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CFY01		FY02		FY03		FY04		FY05		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	11		11		11		11		11	ATIR
	0.1		0.1		0.1		0.1		0.1	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

## **PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS**

The following elements are not affected by the VH-3D Helicopter and, therefore, are not included in Part IV of this NTSP:

### **IV.A. Training Hardware**

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

IV.A.2. Training Devices

### **IV.B. Courseware Requirements**

IV.B.1. Training Services

IV.B.2. Curricula Materials and Training Aids

IV.B.3. Technical Manuals

### **IV.C. Facility Requirements**

IV.C.1. Facility Requirements Summary (Space/Support) by Activity

IV.C.2. Facility Requirements Detailed by Activity and Course

IV.C.3. Facility Project Summary by Program

**NOTE:** Upon confirmation with the squadron, it was determined that the training hardware, training devices, all courseware and training facilities, are assets of the squadron. The primary training contract at HMX-1 is for instruction with, some courseware development by the TC.

**PART V - MPT MILESTONES**

<b>COG CODE</b>	<b>MPT MILESTONES</b>	<b>DATE</b>	<b>STATUS</b>
DA	Began analysis of manpower, personnel, and training requirements.	Feb 00	Completed
DA	Distributed Draft NTSP	Dec 00	Completed
OPO	Approve and promulgate NTSP	FY01	Completed

PART VI - DECISION ITEMS/ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS
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None			
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## PART VII - POINTS OF CONTACT

### NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL

### TELEPHONE NUMBERS

**CAPT Owen Fletcher**

Deputy Aviation Maintenance Programs  
CNO, N781B  
Fletcher.owen@hq.navy.mil

**COMM:** (703) 604-7747  
**DSN:** 664-7747  
**FAX:** (703) 604-6972

**CDR Wanda Janus**

Resource Sponsor / Program Sponsor  
CNO, N785D1  
murphy.cyrus@hq.navy.mil

**COMM:** (703) 697-9359  
**DSN:** 227-9359  
**FAX:** (703) 695-7103

**CAPT Terry Merritt**

Head, Aviation Technical Training Branch  
CNO, N789H  
vandenberg.thomas@hq.navy.mil

**COMM:** (703) 604-7730  
**DSN:** 664-7730  
**FAX:** (703) 604-6939

**AZCS Gary Greenlee**

NTSP Manager  
CNO, N789H1  
greenlee.gary@hq.navy.mil

**COMM:** (703) 604-7743  
**DSN:** 664-7743  
**FAX:** (703) 604-6939

**CDR Kevin Neary**

Aviation Manpower  
CNO, N122C1  
n122c1@bupers.navy.mil

**COMM:** (703) 695-3247  
**DSN:** 225-3247  
**FAX:** (703) 614-5308

**Mr. Robert Zweibel**

Training Technology Policy  
CNO, N795K  
zweibel.robert@hq.navy.mil

**COMM:** (703) 602-5151  
**DSN:** 332-5151  
**FAX:** (703) 602-5175

**LTCOL Terry Stautberg**

Assault Helicopter Requirement Officer  
CNO, N780F3  
stautberg.terry@hq.navy.mil

**COMM:** (703) 695-2672  
**DSN:** 224-2672  
**FAX:** (703) 614-7047

**MAJ John Celigoy**

Heavy Helo Coordinator  
APW-51  
celigoyjh@hqmc.usmc.mil

**COMM:** (703) 614-1729  
**DSN:** 224-1729  
**FAX:** (703) 614-2318

**COL David Barracough**

Branch Head, USMC Aviation Manpower Management  
CMC, ASM-1  
barracoughdl@hqmc.usmc.mil

**COMM:** (703) 614-1244  
**DSN:** 224-1244  
**FAX:** (703) 614-1309

**LTCOL Angela Clingman**

USMC Aircraft Maintenance Officer  
CMC, ASL-33  
clingmanab@hqmc.usmc.mil

**COMM:** (703) 614-1187  
**DSN:** 224-1187  
**FAX:** (703) 697-7343

**COL Richard Findlay**

Head of Aviation Officers Assignment Section  
HQMC MMOA-2  
Richard\_j\_findlay@manpower.usmc.mil

**COMM:** (703) 784-9267  
**DSN:** 278-9267  
**FAX:** (703) 278-9844

## PART VII - POINTS OF CONTACT

### NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL

### TELEPHONE NUMBERS

**MAJ Nicholas Knight**

Unit Head for Enlisted  
MMEA84  
Nicholas\_I\_knight@manpower.usmc.mil

**COMM:** (703) 784-9257  
**DSN:** 278-9257  
**FAX:** (703) 278-9845

**Mrs. Pollyanna Randol**

Aviation NTSP Manager  
CINCLANTFLT, N-721  
randolpa@cfl.navy.mil

**COMM:** (757) 836-0103  
**DSN:** 836-0103  
**FAX:** (757) 836-6737

**Mr. Bill Laray**

Assistant Program Manager, Training Program  
NAVAIRSYSCOM, PMA205  
laraywr@navair.navy.mil

**COMM:** (301) 757-8099  
**DSN:** 757-8099  
**FAX:** (301) 757-8079

**Ms Marie Greening**

Program Manager, Aviation Common Support Equipment  
NAVAIRSYSCOM, PMA260  
greeningma@navair.navy.mil

**COMM:** (301) 757-6899  
**DSN:** 757-6899  
**FAX:** (301) 757-6902

**Mr. S.E. Campbell**

VH DAPML  
NAVAIRSYSCOM, Air 3.1.2K  
campbellse2@navair.navy.mil

**COMM:** (301) 757-5480  
**DSN:** 757-5109  
**FAX:** (301) 757-5970)

**LTCOL Dan Crowel**

VH Deputy Program Manager  
NAVAIRSYSCOM, PMA 2614  
crowldf@navair.navy.mil

**COMM:** (301) 757-5781  
**DSN:** 757-5781  
**FAX:** (301) 757-5109

**MAJ Henry Hess**

VH APML  
NAVAIRSYSCOM, AIR 3.12K  
hesshg@navair.navy.mil

**COMM:** (301) 757-5479  
**DSN:** 757-5479  
**FAX:** (301) 757-5970

**CAPT Patricia Huiatt**

Deputy Assistant, Chief of Naval Personnel for Distribution  
NAVPERSCOM, PERS-4B  
p4b@persnet.navy.mil

**COMM:** (901) 874-3529  
**DSN:** 882-3529  
**FAX:** (901) 874-2606

**LCDR B. Martin**

Hull and Engineering Assignments  
NAVPERSCOM, PERS-404  
P402@persnet.navy.mil

**COMM:** (901) 874-3602  
**DSN:** 882-3609  
**FAX:** (901) 874-2743

**CDR Timothy Ferree**

Branch Head, Aviation Enlisted Assignments  
NAVPERSCOM, PERS-404  
p404@persnet.navy.mil

**COMM:** (901) 874-3691  
**DSN:** 882-3691  
**FAX:** (901) 874-2642

**MAJ Jon Doering**

Head, ACE Branch, TFS Division  
MCCDC, C5325A  
doeringjg@mccdc.usmc.mil

**COMM:** (703) 784-6241  
**DSN:** 278-6241  
**FAX:** (703) 784-6072

## PART VII - POINTS OF CONTACT

### NAME / FUNCTION / ACTIVITY, CODE / INTERNET EMAIL

### TELEPHONE NUMBERS

**MAJ Ed Spicknall**

AMO  
HMX-1 (Cage),  
spicknallen@hmx-1.usmc.mil

**COMM:** (703) 784-5561  
**DSN:** 784-5561  
**FAX:** (703) 784-5575

**CAPT Tim Renz**

AAMO  
HMX-1 (Cage),  
renztd@hmx-1.usmc.mil

**COMM:** (703) 784-5561  
**DSN:** 278-5561  
**FAX:** (703) 784-5575

**LT COL Jeff White**

Operations Officer HMX-1  
HMX-1 (Cage),  
whitejr@hmx-1.usmc.mil

**COMM:** (703) 784-5487  
**DSN:** 784-5487  
**FAX:** (703) 784-5575

**CDR Scott Gingery**

Aviation Department Head  
NAVMAC, 30  
scott.gingery@navmac.navy.mil

**COMM:** (901) 874-6218  
**DSN:** 882-6218  
**FAX:** (901) 874-6471

**Mr. Al Sargent**

NTSP Coordinator  
NAVMAC, 332  
al.sargent@navmac.navy.mil

**COMM:** (901) 874-6247  
**DSN:** 882-6247  
**FAX:** (901) 874-6471

**Mr. Steve Berk**

CNET NTSP Distribution  
CNET, ETS-23  
Stephen-g.berk@cnet.navy.mil

**COMM:** (850) 452-8919  
**DSN:** 922-8919  
**FAX:** (850) 452-4853

**CDR Erich Blunt**

Aviation Technical Training  
CNET, ETE-32  
Cdr-erich.blunt@cnet.navy.mil

**COMM:** (850) 452-4915  
**DSN:** 922-4915  
**FAX:** (850) 452-4901

**GYSGT David Castellano**

Tech Coordinator  
NAMTRAGRU, N2123  
gysgtdavid.castellano@smpt.cnet.navy.mil

**COMM:** (850) 452-9708 ext. 231  
**DSN:** 452-9708 ext. 231  
**FAX:** (850) 452-9769

**GYSGT Anthony Sosa**

Tech Coordinator  
NAMTRAGRU, N2124  
gysgt-anthony.sosa.@cnet.navy.mil

**COMM:** (850) 452-9708 ext. 230  
**DSN:** 452-9708 ext. 230  
**FAX:** (850) 452-9769

**Mr. Phil Szczyglowski**

Competency Manager  
NAVAIRSYSCOM, AIR 3.4.1  
szczyglowspr@navair.navy.mil

**COMM:** (301) 757-8280  
**DSN:** 757-8280  
**FAX:** (301) 342-7737

**Mr. Bob Kresge**

NTSP Manager  
NAVAIRSYSCOM, AIR 3.4.1  
kresgerj@navair.navy.mil

**COMM:** (301) 757-1844  
**DSN:** 757-1844  
**FAX:** (301) 342-7737